

SERIAL NO. 10/812,125

IN THE CLAIMS

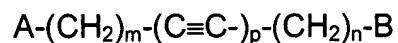
Claim 1. (Original) A method of imaging, measuring and displaying a 3-dimensional dose distribution of an energy field in a translucent 3-dimensional object comprising:

- (a) applying an energy field to the object such that the optical properties are changed upon receipt of the energy;
- (b) optically scanning the object at various positions and angles to provide a series of 2-dimensional representations of the object;
- (c) detecting the measuring light projection data indicative of optical changes in the object;
- (d) calibrating the optical change in the object to the dose of the energy corresponding to each position scan;
- (e) mapping the dose of the energy in the object and
- (f) visually recording the summation of said 2-dimensional representations on an image display receiver comprising a radiation activated metal salt of a crystalline, thermochromic polyacetylene having a conjugated structure uniformly distributed in a rigid or high density semi-solid matrix by a color alteration due to polymerization of the activated polyacetylene to provide a permanent, 3-dimensional image of the object in high spatial resolution.

Claims 2 through 7. (Currently Cancelled)

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Claim 8. (Original) The method of claim 1 wherein said crystalline polyacetylene is a C₂ to C₁₀ radiochromic monomer having the formula:



wherein m and n each independently have a value of from 0 to 30; p has a value of 2 to 4; A and B each independently are R, OR₁, OH, COOR₂, CONR₃R₄ or (CH₂)_r-O-CO-NR₅R₆ or a metal salt of the acid or ester; and where R, R₁, R₂, R₃, R₄, R₅ and R₆ are each independently hydrogen or C₁ to C₁₂ alkyl or aryl and r has a value of from 1 to 4.

Claim 9. (Original) The method of claim 1 wherein the metal salt of the crystalline polyacetylene is a lithium salt.